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REGIONALIZATION OF AGRICULTURAL PRODUCTION -- Warsaw, Zycie, Gospodarcze, Vol V, No 17, 1 - 15 Sep 50

/Maps referred to are appended./

The Six-Year Plan provides an increase of 50 percent over 1949 in agricultural production, with a faster rate of increase in livestock production than in crop production. Crop production will be increased by 39 percent and livestock production by 68 percent.

Such rapid growth of agricultural production will require a marked advance in the social transformation of farm life, a voluntary transition from the small scattered individual peasant farms to a cooperative economy. Therefore, agriculture will be supplied adequately with farm machines and implements, the tempo of rural electrification will be speeded up, and the supply of artificial fertilizers will be increased.

Obviously, to assure fulfillment of the Six-Year Plan, it will be necessary to apply modern technology on a wide scale and improve the organization of agricultural production.

In a planned economy, agricultural production must be adjusted to the over-all plan. Regionalization of agricultural production is imperative for the efficient handling of problems imposed on agriculture by a planned economy.

We know that in different sections of the country physical and economic conditions vary and farm production must be adjusted to these conditions. Poznan, Bydgoszcz, Kielce, and Lodz Wojewodztwos have definite grain-producing

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characteristics; Olsztyn, Krakow, Bialystok and certain parts of Lublin and Rzeszow wojewodztwos are more suitable for livestock production. Because of its physical and soil conditions, the Wisla River Valley is developing into an orchard and truck gardening area exclusively.

Thus, we see that nature itself determines the direction of agricultural production. Regionalization of agriculture should be based on emphasizing production of certain crops according to local, natural, and economic conditions; systematic crop rotation; and the correct proportion of livestock.

Obviously, the balance between crop and livestock production will vary in the various regions. Not every farm cultivates the same crops nor does it maintain the same proportion between various crops. Proper crops and livestock will be chosen. In some areas, the production of cattle will be greater and in other areas, hog production will be stressed. In other words, under present conditions in Poland, regionalization means emphasizing certain types of production, although under present conditions there will be deviations.

The study of regionalization of agricultural production in Poland must be preceded by a discussion, in a general way, of the basic types of agricultural production.

The guiding principles for agricultural production must tie in with the guiding principles of the economic plan, since the former have to serve as the basis for directives setting up agricultural production.

The first consideration of the plans is the transformation of a typically agricultural country into a multilaterally developed economic structure, with a balance between agriculture and industry. Provision should be made, therefore, for a shift of population from agriculture to other trades.

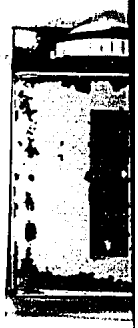
We should assume that consumption of farinaceous products will remain at about the present level; consumption of root crops will diminish; and consumption of meat, fats, sugar, vegetables, and fruits will increase. Despite a marked increase in the caloric value of food consumed by the masses, there will still be great possibilities for expanding exports.

Prospects of grain surpluses for export are slight. Intensive cultivation of root crops for varied uses, especially as feed for livestock, will guarantee rational exploitation. Therefore, in connection with the desired domestic consumption and exports, production of milk, meat, and other products of animal origin must be increased. In striving to increase livestock production, it is necessary to increase the acreage of forage crops.

Cultivation of root crops should also be increased because of opportunities of increasing the export of sugar and potato products, and using alcohol as fuel.

Expanding the acreage of industrial root crops also tends to intensify agricultural production.

We must also stress the necessity of expanding cultivation of fibrous and oleaginous crops, and plan for a great increase in the production of orchards and truck farms which at present cover about one percent of the total area under cultivation.



Thus, the general direction of agricultural production might be summed up as follows:

1. Increased livestock production
2. Expanded forage crop acreage
3. Increased cultivation of industrial crops
4. Increased cultivation of orchards

These are only general guides, since an adequate and detailed preparation of directives for agricultural production will require more time.

The extent of specific crop cultivation in a given region depends on the adjustment of farmers to local climatic conditions, soil properties, and general economic conditions.

Knowing the climatic conditions, soil properties, and economic conditions, we can establish the guiding principles for the regionalization of agricultural production.

The following are the main crops in Poland: bread grains (rye, wheat, and barley), forage grains (oats), root crops (potatoes and sugar beets), and industrial crops.

Participation of individual wojewodztwos in this production is not uniform. Grain production, predominantly rye, is concentrated in the central, western, and some northern wojewodztwos. Wheat is predominant in the south, the second grain area.

The four grain crops -- rye, wheat, barley, and oats -- cover a total area of 9,504,900 hectares, or 57.7 percent of the total arable land.

The largest areas of grain cultivation are in Kielce, Lublin, and Poznan wojewodztwos; the smallest areas of rye cultivation are in Olsztyn and Gdansk wojewodztwos.

The largest areas under cultivation in grain crops are the wojewodztwos which have little rainfall during the vegetative period, that is, the central wojewodztwos.

Bread Grains

Rye

Next to potatoes, rye is the most widely cultivated crop in Poland. The climate and the vegetative conditions are well suited to the cultivation of rye. Before the war, the chief rye-producing areas were in central and northern Poland, stretching from east to west. In the central belt -- a land of large valleys, light rainfall, and poor soil -- 40 percent of the arable land is under cultivation to rye.

Because of heavy rainfall, the area sown to rye in the foot hills of the Carpathian and Sudeten Mountains comprises only 5 percent of the arable land.

As rye yields increase, the area sown to rye will be decreased. Reducing the cultivation of rye to its proper limits is of tremendous significance in developing Polish agriculture along new lines. Thus more land will be made available for fodder production, which in turn will supply greater quantities

of protein than before the war in order to produce adequate quantities of milk, meat, and fats for the dietary requirements of the population and also yield a surplus for export.

Wheat

In 1934-1938, the area under wheat cultivation was abou[illegible]343 [sic; probably should read 1,343,000] hectares (8.15 percent of the arab[illegible]nd, or 13.8 percent of the total area sown to the chief grains). The intensity of wheat cultivation in individual wojewodztwos was as follows:

Wojewodztwo	Percent of Total Area in the Wojewodztwo Sown to Grain Crops
Warsaw	11.9
Lodz	8.1
Kielce	14.3
Lublin	29.1
Bialystok	19.3
Olsztyn	8.1
Gdansk	12.1
Pomorze	14.0
Szczecin	6.6
Foznan	15.4
Wroclaw	22.3
Katowice	14.8
Krakow	13.5
Rzeszow	21.6

The largest percentage of arable land in wheat is in Lublin, Wroclaw, Rzeszow, and Krakow wojewodztwos. A very small area of Szczecin and Olsztyn wojewodztwos is under cultivation to wheat. During 1928-1932, the per capita production of wheat was 59 kilograms; during 1933-1937, it was 62 kilograms.

There is no doubt that Poland can cultivate more wheat than it does at present. Even the most cursory inspection of the soils shows that much of the land now sown to rye could be sown to wheat. In many instances, rye -- instead of wheat -- is being cultivated in loamy, rich soils.

Winter wheat will be cultivated wherever soil and climate permit, and the winters are not too long or too severe. However, great strides have been made in increasing the resistance of wheat to cold. In some northern regions of the USSR, specially adapted varieties of winter wheat are being cultivated.

In recent years, the acreage under cultivation to spring wheat has been greatly increased throughout the world; especially in the USSR, wheat growers have obtained sensational results permitting the harvesting of spring wheat as far north as the polar region.

A campaign to promote the cultivation of spring wheat will be of great assistance in increasing wheat cultivation.

As to farm organization, the division of field work into the two separate time periods required in wheat cultivation [illegible] be considered an asset. The lower average yield of spring wheat as compared to winter wheat should not be given decisive consideration because spring wheat is not as valuable

in crop rotation as the winter variety [sic]. Therefore, planting spring wheat in a field suitable for barley will prove advantageous if only an average crop is obtained. It is true, however, that spring wheat requires very careful prewinter plowing, a well-fertilized soil, and very early sowing.

The following regions are suitable for the cultivation of wheat:

1. The Southeastern Region, comprising the southern powiats of the Lublin Wojewodztwo, the southwestern powiats of Kielce Wojewodztwo, the northern powiats of Krakow Wojewodztwo bordering on Kielce Wojewodztwo, and the central and eastern powiats of Rzeszow Wojewodztwo. [See Map No 1.]

2. The Southwestern Region, comprising the southwestern powiats of Slask-Dabrowa Wojewodztwo and the central powiats of Wroclaw Wojewodztwo situated in the Oder River Valley.

3. The Central Region, comprising Ciechanow, Sochaczew, Plock, and Gostynin powiats of Warsaw Wojewodztwo; the Kutno, Lowicz, Lyczyca, and Sieradz powiats of Lodz Wojewodztwo; the Wloclawek, Nieszawa, Inowroclaw powiats of Pomorze Wojewodztwo; and the southeastern powiats of the Poznan Wojewodztwo.

4. The Lower Wisla Region, comprising powiats of Pomorze and Gdansk wojewodztwos in the valley of the lower Wisla River.

5. The Pyrzyce Region, confined to Pyrzyce Powiat of Szczecin Wojewodztwo, and the neighboring gminas of Chojna, Mysliborz, Choszczno, Gryfino, and Starogard powiats.

Barley

Barley is important as food for humans, forage for livestock, industrial raw material, and as an export product.

The highest percentage of arable land under cultivation to barley is in Olsztyn (exclusively the forage variety), Wroclaw, Slask, Pomorze, Lublin, and Kielce wojewodztwos.

Barley for brewing purposes is a highly developed and demanding plant, and can be successfully grown only in a highly cultivated soil. Although it is not very demanding with respect to the natural properties of the soil, it requires proper cultivation and fertilization, and a place in the crop rotation. In cultivating this product, the grower must remember that quality is most important. Proper quality of industrial barley seed is especially important.

In discussing regionalization of barley cultivation, a few words should be devoted to winter barley, which is widely cultivated in Poland. Its poor resistance to freezing is the main drawback in its cultivation. When successfully grown, winter barley yields large crops; in some instances, even larger than any variety of spring barley. Its grain is more like the fodder variety than the industrial. The barley grain and straw are very valuable since they provide the farm with the first substantial fodder before the harvest begins.

Since winter barley is harvested early, even before rye, it enables the planting and harvesting of another crop, which is almost impossible with any other crop under Poland's climatic conditions.

Yet, it must be repeated that the proven drawback of winter barley is its poor resistance to low temperatures, especially the fluctuating temperatures of the transition period from winter to spring. However, barley can withstand frosts if it is well covered with snow throughout the winter.

It is recommended that winter barley be cultivated in areas with a mild climate or abundant snowfall to protect it from freezing.

The following are the main regions of barley cultivation:

1. The Northcentral Region. The best quality barley for brewing is cultivated in the powiats of Gdansk Wojewodztwo which are situated on both sides of the Lower Wisla River; the Puslek, Tusz Morag powiats of Olsztyn Wojewodztwo; the southeastern powiats of Pomo . Wojewodztwo (Szczecin, Grudziadz, Lubawa, Brodnica, Rypin, Sztum, Wloclawek, Nieszawa, Inowroclaw, Torun, Celmno, Szubin. and Wyrzysk); the Sochaczew, Gostynin, Plock, Ciechanow, and Sierpc powiats of Warsaw Wojewodztwo; Kutno Powiat, and the northern sections of Lowicz and Leczyca powiats of Lodz Wojewodztwo; and the eastern and central powiats of Poznan Wojewodztwo.

2. The Slask Region. Barley for brewing is cultivated in the Zlotoria, Brzeg, Bystrzyca, Dzierzoniow. Glogow, Javor, Klodzko, Legnica, Olawa, Strzelin, Sroda, Swidnica, Walbrzych, Wroclaw, and Zabkowice powiats of Wroclaw Wojewodztwo; and the Glubczyce, Grodkow, Kozle, Nysa, Pradnik, Raciborz, and Niemodlin powiats of Katowice Wojewodztwo.

3. The Southeastern Region. This region comprises the southern powiats of Lublin Wojewodztwo; the Pinchow, Jedrzejow, Sandomierz. Opatow, Ilza, and Radom powiats of Kielce Wojewodztwo; and Miechow Powiat of Krakow Wojewodztwo.

4. The Northeastern Region. Forage barley is cultivated in the northern powiats of Bialystok Wojewodztwo, and the northeastern powiats of Olsztyn Wojewodztwo.

5. The Northwestern Region. Forage barley is cultivated in the northwestern powiats of Szczecin Wojewodztwo, and the Gorzow and Strzelce powiats of Poznan Wojewodztwo.

6. The Southern Region. Winter barley is cultivated in the foothills of the Carpathian Mountains and the Oder River Valley in Wroclaw Wojewodztwo. /See Map No 2./

Forage Crops

Oats

Oats are the second most important grain of the four chief grains cultivated in Poland, with respect to acreage and to grain yield. The highest percentage of oat cultivation is in Krakow, Rzeszow, Bialystok, Szczecin, Wroclaw, and Slask wojewodztwos.

The smallest acreage in oats is in the Pomorze, Poznan, Warsaw, and Lodz wojewodztwos, which have little rainfall during the vegetative period.

The main regions of oat cultivation are the following:

1. The Southern Region, comprising the submontane powiats of Wroclaw, Krakow, and Rzeszow wojewodztwos.

2. The Northeastern Region, comprising the Blonie, Grojec, Mins., Wegrow, Sokolow, and Ostroleka powiats, and parts of Przasnysz and Makow powiats, of Warsaw Wojewodztwo; the northern powiats of Lublin Wojewodztwo; the entire Bialystok Wojewodztwo; and Wegorzewo Powiat of Olsztyn Wojewodztwo.

3. The Northern Region, comprising the Braniewo, Slawka, Lidzbork, Bystrzyce, Pasleh, and Morag powiats, and part of Susz Powiat, of Olsztyn Wojewodztwo; the Elblag, Kalberg, Sztym, Gdansk, Leberk, Kartuzy, and Koscierzyna powiats of Gdansk Wojewodztwo; and the Slupsk, Bytow, Slawno, Miastko, Koszalin, Czluchow, Szczecinek, Zlotow, Kolobrzeg, Bialogard, Drawsko, Nowogard, Kamien, Starogard, and Choszczno powiats of Szczecin Wojewodztwo.

Corn

The lack of interest in the cultivation of corn in Poland is due partly to the well-known conservatism of the farmer, and his dread of all innovations; and partly to the limited knowledge of the value and advantages of corn cultivation. Cultivation of corn in Poland should be planned along entirely new lines. Corn could replace barley, oats, and, to some extent, potatoes as forage for feeding work horses, fattening hogs, and feeding young livestock.

Corn should be more widely cultivated in Poland since the climate and soil are favorable, especially in the southern and central wojewodztwos; and since Polish varieties are now available which eliminate uncertainty and assure a good crop.

The most suitable regions for the cultivation of corn are the following: The central powiats of the Oder River Valley; the northeastern powiats of Wroclaw Wojewodztwo; the southeastern powiats of Poznan Wojewodztwo -- Gostyn, Leszno, Jarocin, Ostrow, Rawicz, Kosoien, and Srem; Inowroclaw and Nieszawa powiats of Pomorze Wojewodztwo; the southern powiats of Lublin Wojewodztwo -- Lublin, Chelm, Krasnik, Zamosc, Hrubieszow, Biligoraj, and Tomaszow; and the northeastern powiats of Rzeszow Wojewodztwo -- Lan[illegible], Tarnobrzeg, Lancut, Jaroslaw, Przeworsk, Przemysl, and Debica.

Legumes and Other Forage Crops

The importance of legume cultivation is usually underestimated, mostly because there is no immediate gain. Actually, this plant group is important for the protein content essential to human diet, its forage value, and its contribution to soil improvement. There is also a considerable export market for the seeds.

Cultivation of legumes is especially important in livestock production, which depends greatly on the extent of the leguminous crop.

The pea is the most common of the edible legumes; the pelushka, vetch, bean, and sweet lupine are the most common of the forage plants.

Among the papilionaceous plants, first place is occupied by clover and the second by serradella.

The pea is almost the only edible legume cultivated to any extent in Poland. It is usually grown in Gdansk, Pomorze, and Poznan wojewodztwos, but is rare in Slask-Dabrowa and Szczecin wojewodztwos. The regions of pea cultivation coincide with the regions of wheat cultivation.

Apart from peas, legumes and papilionaceous plants are usually cultivated on a larger scale only as a basic source of forage for livestock.

The most commonly cultivated forage plants are clover (especially the red variety), serradella, summer vetch, sweet lupine, beans, and alfalfa.

The cultivation of forage crops is distributed as follows: Clover -- Krakow, Rzeszow, Olsztyn, Wroclaw, Kielce, and Lublin wojewodztwos; serradella -- Warsaw and Lodz wojewodztwos, and the northern part of Lublin Wojewodztwo; vetch and beans -- Poznan, Pomorze, Gdansk, and Olsztyn wojewodztwos; pelushka -- Bialystok, Warsaw, and Olsztyn wojewodztwos.

A careful analysis of the existing climate, soil, economic conditions, and distribution of forage crop cultivation suggests six forage regions:

1. The pasture region -- Pastures predominate (over 60 percent) and meadows are in second place.

2. The meadow region -- This is a very small region with meadows predominating. A small area is devoted to forage crops.

3. The meadow-pasture region -- Over 75 percent is devoted to permanent green forage crops.

4. The region of pastures and forage crop cultivation -- This includes areas in which 75 percent of the total area are pastures and half [sic] is in forage plants.

5. The region of forage crop cultivation -- Cultivated fields supply the basic forage.

6. The region of root crop cultivation for forage purposes -- Characterized by extensive cultivation of sugar beets, potatoes, and a large scale cultivation of root crops for forage purposes.

Because of such diverse forage regions, livestock production in the different sections of the country also varies.

It is singularly characteristic under conditions prevailing in Poland, that neither natural conditions nor forage resources are the real indicators of livestock production in particular regions. The most important factors are population density, size of the farms, and market proximity.

Except for grains, the cultivation of root crops occupies the largest area of arable land.

In the prewar period (1934-1938), cultivation of root crops was distributed very unevenly throughout Poland. Root crops occupied the largest percentage of arable land in Katowice, Poznan, Wroclaw, Szczecin, Olsztyn, and Bialystok wojewodztwos.

Of the root crops, potatoes occupy 85.3 percent of the total acreage. Sugar beets are in second place, comprising 6.9 percent of the total area under cultivation.

Potatoes

Next to rye, potatoes are the most typical and most important crop of Polish agriculture. They are used as food for the population, feed for livestock, and raw material for industry.

Areas of potato cultivation are increasing because of favorable climate and abundance of light soils. Potato cultivation is most extensive in Katowice, Lodz, Szczecin, and Poznan Wojewodztwos; but very small in Olsztyn, Bialystok, and Gdansk wojewodztwos. This state of affairs was undoubtedly influenced by the dissimilarities of population density in these areas, by the varied concentration of large cities and industrial centers which are important potato consumers, and also by the very unequal endowment of these areas in forage resources.

Poland's climate, especially in the northern sections, is more favorable for potato cultivation than the climate of the western and southwestern European countries, which have a milder climate and more abundant rainfall. Poland's climate, which is more severe and drier, gives more protection against potato diseases.

In the realization of the plan, well-organized potato management must take into account not only the consumer value and the importance of potatoes as a source of over-all forage supply, but also the losses sustained in storing potatoes.

Accordingly, the following regions are recommended for the cultivation of potatoes:

1. The Central Region, cultivating mostly edible potatoes, starts with the Slask Basin, embraces the industrialized Krakow region, extends along the Wisla to the San River (the former Central Industrial Region, where population density makes extensive potato cultivation imperative), and finally continues in a broad belt to the manufacturing region of Lodz and greater Warsaw.

2. The Seacoast Region, serving as the supply base for the coast and the ports. It may be divided into the subregions of Szczecin and Gdansk.

3. The Suburban Regions, supplying urban populations, are being formed in the vicinity of the larger cities, Poznan, Bydgoszcz, Wroclaw, and Lublin.

4. The Northwestern Region, specializing in industrial potatoes. Concentration of potato products industries in Szczecin, Poznan, and Wroclaw wojewodztwos led to the formation of a wide region for the cultivation of industrial potatoes. The region extends from the Sudeten Mountains to the Oder River, through Ziemia Lubuska and Pomorze to the coast.

5. The Mixed Region, growing industrial and forage potatoes. It embraces the northern powiats of Warsaw Wojewodztwo, the central and southeastern powiats of Bialystok Wojewodztwo, and the northern powiats of Lublin Wojewodztwo.

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Sugar Beets

Sugar beet cultivation is one of the more important agricultural products of Poland. It comprises 13 percent of the total world production. In the historical development, beet cultivation together with the sugar industry led the way to an improved general crop culture, improved land cultivation, and high level cattle breeding.

The waste from sugar beet cultivation, such as leaves and heads, and the residue from industrial processing constitute valuable fodder for livestock.

Sugar beet cultivation is very labor consuming. It requires considerable draft power and manual labor, large quantities of manure and artificial fertilizer, meticulous cultivation and care, and a knowledge of methods for combating beet diseases and pests.

Cultivation of sugar beets must be concentrated in areas of dense population and areas with a large number of livestock. The bulkiness of the crop requires efficient means of transportation and the development of a transportation network to receiving points or sugar refineries.

The development of sugar beet cultivation has become synonymous with prosperous farms and intensive farming.

Poland has two basic regions of sugar beet plantations:

The first region is a large area extending from the Baltic, including Tczew, Starogard, Kwidzyn, Malborg, and Sztum powiats of Gdansk Wojewodztwo; and Paslek, Morag, and Susz Powiats of Olsztyn Wojewodztwo Farther south, it spreads into Pomorze and Poznan wojewodztwos, and a large arc of land to the east which includes Ciechanow, Gostyn, Sochaczew, Plock, and Plonsk powiats of Warsaw Wojewodztwo. The region continues to the southwestern part of Lodz Wojewodztwo embracing Kutno, Lowicz, Leczyca, Sieradz, and Wielun powiats, and finally ends in Katowice and Wroclaw wojewodztwos. The latter two wojewodztwos contain the greatest concentration of sugar beet plantations and sugar refineries, especially in the Dolny Slask region.

The second region, the Lublin-Kielce Region, is much smaller. It includes the northern powiats of Lublin Wojewodztwo, the southeastern powiats of Krakow Wojewodztwo, and the Jaroslaw-Przeworsk area of Rzeszow Wojewodztwo. This region is capable of planting approximately 40,000 hectares in sugar beets.

Besides these regions, there is the third, smaller region of Pyrzyce. This region includes Pyrzyce Powiat and the adjacent gminas of Gryfino, Choszczno, Starogard, and Nowogard powiats of Szczecin Wojewodztwo. This third region is capable of planting 15,000 hectares. /See Map No 3./

Industrial Crops

Industrial crops are a source of raw material for the agricultural, fermentation, textile, industrial oils, and other industries. Although they cover only a small area of arable land, their cultivation is of considerable significance to the incomes of peasants. Industrial crops include: oleaginous plants, fibrous plants, tobacco, hops, and sugar beets.

The cultivation of oleaginous plants was rather limited in Poland before World War II. Farmers showed little interest in cultivating these plants because they brought very low prices, and because large quantities of both seeds and oils were being imported.

With increased oil consumption, Poland must strive to increase the cultivation of oleaginous plants, especially since refining methods were improved during the war and new methods of fat-hardening developed. Conditions in Poland favor the cultivation of the following oleaginous crops: rapeseed, agrimony, oleaginous flax, mustard, and poppy.

Rapeseed

Winter rapeseed is sensitive to frost. Harsh, snowless winters and widely fluctuating spring temperatures may cause rapeseed to freeze.

On the basis of soil, climate, and cultivation, the following regions are suitable for rapeseed:

1. Lublin-Kielce-Rzeszow Region, embracing the northern powiats of Lublin Wojewodztwo, the eastern powiats of Kielce Wojewodztwo, and the northern and central powiats of Rzeszow Wojewodztwo.

2. Slask Region, including Slask Opolski and the powiats of Wroclaw Wojewodztwo, located in the Oder River Valley.

3. The Central Region, including Zulawy, the southeastern powiats of Poznan Wojewodztwo, the southeastern powiats of Pomorze Wojewodztwo which is located in the Wisla River Valley, and the northern powiats of Lodz Wojewodztwo.

4. The Pyrzyce Region, embracing Pyrzyce, Starogard, Bialogard, Choszczno, Gryfino, and Chojna powiats of Szczecin Wojewodztwo; and Strzelce, Gorzow, Sulecin, Swierzyna, Miedzychod, Szamotuly powiats of Poznan Wojewodztwo. /See Map No 4./

Poppy

Next to rapeseed, poppy is one of the most important oleaginous plants, although its cultivation is not as widespread as that of the others. There are great possibilities, however, for developing poppy cultivation in Poland. Poppy is a source of oil and valuable alkaloids needed by the chemical and pharmaceutical industries.

A large area of Poland is quite well suited to large-scale cultivation of the poppy. The most suitable regions are in the southern and southwestern sections of the country.

Fibrous Plants

The first group of textile raw materials are those which can be processed into artificial fibers; the second group, those which can be used in their natural state. The origin of artificial cellulose fibers and of natural cotton, flax, hemp, jute, manila hemp, and coconut fibers, is basically the same.

Poland's climate is not suitable for many varieties of fibrous plants. Poland's only fibrous plants at present are flax and hemp.

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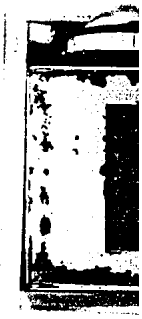

FLAX

Flax is important to the state economy as a raw material for the textile industry. Flax and hemp may also be included in oleaginous plants, since the seeds of both these plants yield oils for the fats industry.

In the prewar period, within Poland's present boundaries, the area devoted to flax cultivation amounted to 61,410 hectares or 0.37 percent of the total arable land. The largest areas of flax cultivation were in Bialystok, Wroclaw, Lublin, and Warsaw wojewodztwos; the smallest areas were in Gdansk, Olsztyn, and Krakow wojewodztwos.

To develop good fivers, flax needs a moderately warm and humid climate. It requires much water and cultivation is usually successful in areas where the annual rainfall reaches 600 millimeters favorably distributed during the vegetative period. Since flax requires moisture in the soil and in the air, proximity to the sea or large rivers is favorable to its cultivation.

The best conditions exist in the following regions:

1. The Northeastern Region, comprising Olsztyn Wojewodztwo (except its western powiats); Wabrzezno, Brodnica, and Lubawa powiats of Pomorze Wojewodztwo; the entire Bialystok Wojewodztwo, the northeastern powiats of Warsaw Wojewodztwo, and the northern powiats of Lublin Wojewodztwo. This region is considered the most suitable for flax cultivation with regard to climate, demography, and [economic?] organization. However, a serious shortage of retting plants makes it advisable to construct new plants as quickly as possible. This region may be considered the raw material supply base for flax, and the planting area should be at least 100,000 hectares.

2. The Poznan-Pomorze Region, embracing the Lubuska area (excluding Swiebodzin Powiat), the northern powiats of Poznan Wojewodztwo, the southeastern powiats of Szczecin Wojewodztwo, the western powiats of Gdansk Wojewodztwo, and the western powiats of Pomorze Wojewodztwo. The maximum planting area in this region would be 50,000 hectares.

3. The Southern Region, comprising the submontane powiats of Krakow Wojewodztwo; the southeastern section of Rzeszow Wojewodztwo, excluding Przeworsk and Jaroslaw powiats; and Biłgoraj Powiat of Lublin Wojewodztwo. So far, the plantation area in this region is not very large, nevertheless it is a typical flax region and the plantation area should be increased in the near future to approximately 50,000 hectares.

4. The Slask Region, embracing the northern powiats of Slask Wojewodztwo; the submontane, western, and northern powiats of Wroclaw Wojewodztwo; the southern powiats of the Recovered Territories of Poznan Wojewodztwo; Wielun Powiat of Lodz Wojewodztwo; and Kepno Powiat of Poznan Wojewodztwo. Despite the existence in this region of about 12 retting plants, flax cultivation should be reduced in this area for economic and climatic reasons, and should be expanded in the northwestern areas. The plantation area in this region should not exceed 20,000 hectares. [See Map No 5.7]

HEMP

Hemp, like flax, is grown for seed and fibers. Hemp is used mainly in the manufacture of coarse cloth, cord, and ropes when properly processed, however, it can often be used as a substitute for flax.

Hemp is a southern plant, but some varieties can be and are cultivated in countries of temperate climate. A warm dry climate is more suitable.

The following are the main hemp cultivation regions:

1. The Lublin-Kielce-Rzeszow Region, embracing the central and southern powiats of Lublin Wojewodztwo, and the central and northeastern powiats of Rzeszow Wojewodztwo.

2. The Kujawy-Notec Region, embracing the Notec River Valley and Kujawy.

3. The Zulawy Region, embracing the areas of the lower Wisla River and its estuary, and the estuary of the Prawisla River.

4. The Oder Region, embracing the Oder River Valley.

HOPS

Hops are among the oldest crops cultivated in Poland. At the beginning of the twentieth century, hops has a permanent place in the country's exports.

Poland's climate is suitable for the cultivation of fine aromatic varieties of hops. The varieties of hops cultivated in the continental climate produce coarse and ordinary strobiles while those cultivated in a humid climate have a light aroma; in a colder climate, the strobiles do not mature and have a pungent odor.

A good climate is a basic requirement for the production of fine aromatic hop strobiles. Climate affects the delicacy, yield, size, and the shape of the strobiles, and also the quality and quantity of aromatic oils and bitter resinous substances.

The cultivation of hops requires large investments in plantations, drying lofts, and proper storage facilities.

Favorable climate and soils permit Polish agriculture to do more than just supply the needs of the country.

Since it is necessary to expand the hop plantation area, plantations should not be dispersed throughout Poland, but rather concentrated in small areas. Limiting hop cultivation to small areas will permit properly planned distribution of drying lofts and sulfur kilns, provide expert care required for proper cultivation, and ensure a supply of qualified workers.

The following regions are best suited for the cultivation of hops:

1. Lublin Region, comprising the central and southwestern powiats of Lublin Wojewodztwo (Pulawy, Lublin, Krasnik, Jasiow, Zamosc, Hrubieszow, and Chelm powiats; parts of Lukow, Lubartow, and Wlodawa powiats); the eastern powiats of Kielce Wojewodztwo (Kozienice, Ilza, Opatow, and Sandomierz); and the Busko, Jedrzejow, and Miechow powiats of Krakow Wojewodztwo. This concentration of plantations will have a capacity of more than 1,200 hectares.

2. Lodz Region, has only a small hop cultivation center in Radomsko Powiat of Lodz Wojewodztwo.

Should there be a need to increase the hop plantation area, the Slask Region could be developed. This region consists of a belt of land stretching from Wodzislaw and Rybnik, mainly along the left bank of the Oder River, to Brzeg and Olawa. The climate and soil are suitable for hops but there is a shortage of manpower.

Livestock Production

The basic principle of regionalization is to breed livestock most suitable to local conditions. Climate, soil, topography, elevation, and vegetation vary greatly in different sections of Poland. Furthermore, the transformation of the national economic structure must also be taken into account. The aim is to increase, through investment, the industrial potential of the country. The relation of livestock breeding to increased industrial investment is simple. Industrial and urban development creates new consumer markets for meat and dairy products. Therefore, livestock production must form the real basis of food resources for the industrial centers and urban areas.

Overall natural conditions and economic factors should govern the type of livestock to be raised. In strict conformity with the general trend, economic conditions should govern the choice of stock for production or cross breeding.

There are some foreign breeds among the various breeds and varieties of livestock in different parts of the country, but the majority are domestic breeds. There are crossbreeds of both these types, the quality depending on whether the crossbreeding was planned or was accidental.

As a result of the tremendous war damages, migrations of the agricultural population, and accidental crossbreeding, Poland has a most peculiar conglomeration of mixed breeds. After a certain quantitative level of livestock production has been reached, it will be imperative to remedy this state of affairs by establishing production trends and introducing proper breeds to the separate breeding regions.

In establishing livestock production regions, the following conditions must be taken into account: (1) provisions of the Six-Year Plan on livestock production, (2) natural and economic conditions, and (3) type of livestock formerly raised in a locality. These factors should determine the choice of breeds best suited to attain the desired goal in a given locality.

Achievement of Soviet zootechnologists and our own experience shows that a good breeding program must be based on selective breeding stock best suited to existing conditions. The good points -- health, great fertility, good utilization of fodder -- of domestic breeds have thus far been unappreciated and must be recognized.

If domestic breeds are less productive than foreign breeds, it is simply because they have been raised under poor conditions and nothing has been done to create conditions essential to high productivity.

Polish zootechnologists have erred in claiming that domestic breeds do not require intensive feeding and care. Under the capitalist system, Polish breeders leaned toward economical and primitive husbandry, livestock was poorly fed and cared for improperly; naturally, livestock did not attain the desired development and productivity.

It has been shown that, with proper feeding and care, domestic breeds can easily rival and, in many respects, even excel foreign breeds.

Horses

Three large horse-breeding regions have been set up:

1. The Southeastern Region, including Krakow and Rzeszow wojewodztwos, most of Lublin Wojewodztwo, and the southern part of Kielce Wojewodztwo. This region is situated in the foothills and is not greatly industrialized or intensively farmed. It has been chosen for breeding thoroughbred light-weight horses of the Nowy Sacz, Lublin, and Kielce type.

2. The Central Region, comprising Poznan and Lodz wojewodztwos, the northern half of Wroclaw Wojewodztwo, the eastern powiats of Szczecin Wojewodztwo, and most of Pomorze and Warsaw wojewodztwos. This region has some highly industrialized areas but most of the area is intensively farmed. This region, which has a large network of hard-surfaced and asphalt roads, can use heavier wagons and agricultural equipment. It has been chosen for breeding thoroughbred horses of types with more weight and a broader bone structure. The Poznan breed is to be used as breeding stock in this region while cold-blooded horses are to be excluded.

3. The Third Region, including half of Wroclaw Wojewodztwo, almost all of Slask-Dabrowa Wojewodztwo, the greater part of Szczecin Wojewodztwo, a strip along the lower Wisla River in Pomorze and Gdansk wojewodztwos, Olsztyn Wojewodztwo, most of Bialystok Wojewodztwo, and several powiats of Warsaw and Lodz wojewodztwos. It has been chosen for raising thoroughbred horses; especially heavy, cold-blooded horses. These types are to be bred separately with no crossbreeding.

Setting up regions for horse breeding based on breeds and types will improve efficiency in livestock breeding and give it proper direction. The regions have been defined in rather general terms, but as local breeds and types become more distinct the regions will be more definitely fixed.

Cattle

Cattle production is probably more profitable than any other branch of livestock production. Since cattle supply meat, milk, draft power, and many slaughtering by-products, production is classified according to three categories: dairy, beef, and draft power. Regions of dairy cattle, beef-dairy cattle, and all-purpose cattle, develop depending on the type of soil, quantity and quality of forage, and the neighboring market demands.

The predominance of dairy cattle production in Poland is due to natural conditions, demand of urban markets, and the internal needs of the villages. The basic fodder used in dairy cattle production is waste from grain production, silage, and between-season fodder crops.

The trend in dairy cattle is characterized by limiting the increase of cattle to the so-called dairy husbandry, located in the immediate vicinity of large urban and industrial centers. The cattle are fed in barns and the regions are noted for a high percentage of milk cows.

The milk region comprises Bialystok, Lodz, Kielce, Katowice, and Gdansk wojewodztwos; the Warsaw Wojewodztwo excluding Sierpc, Gostynin, and Plock powiats; the Lukow, Radzyn, Biala, Lubartow, Wlodawa, and Bilgoraj powiats of Luhlin Wojewodztwo; the Nisko, Kolbuszowa, Tarnobrzeg, and Mielec powiats of Raeszow Wojewodztwo; Krakow Wojewodztwo excluding its submontane powiats; the southern part of Zielona Gora Wojewodztwo: the Kamien, Starogard, Nowogard, Szczecin, Gryfino, and Pyrzyce powiats of Szczecin Wojewodztwo; Koszalin Wojewodztwo, excluding Slupsk, Drawsko, and Koszalin powiats; and the northwestern part of Olsztyn Wojewodztwo.

In the dairy-beef region, forage is derived primarily from the waste of the agricultural industry such as extracts, residues, and pulp. Shortages are made up by the cultivation of between-season crops and silage. Fattening of cattle on extracts and residues is very important in this region. Likewise, the great demand for manure in this region tends to increase the number of cattle distributed per 100 hectares.

The beef production trend is expressed by increases in the percentage of steers. As in the region described above, the cattle are fed in barns throughout the year.

This region embraces western Poland, namely: Poznan, Bydgoszcz, and Opole wojewodztwos; Wroclaw Wojewodztwo, excluding the submontane powiats; the northern part of Zielona Gora Wojewodztwo; the eastern part of Szczecin Wojewodztwo; Koszalin, Drawsko, and Slupsk powiats of Koszalin Wojewodztwo; the southeastern part of Olsztyn Wojewodztwo; the Plock, Sierpc, and Gostynin powiats of Warsaw Wojewodztwo; the southern part of Lublin Wojewodztwo; Debica, Rzeszow, Lancut, Lubaczow, Przeworsk, Jaroslaw, and Przemysl powiats of Rzeszow Wojewodztwo.

A multi purpose region stretches along the mountains in the southern part of the country, embracing the southern powiats of Wroclaw and Opole wojewodztwos, Cieszyn and Biala powiats of Koszalin Wojewodztwo, and the southern powiats of Krakow and Rzeszow wojewodztows.

From this varied background three basic breeds have emerged and gradually spread throughout Poland: (1) red Polish breed, (2) black and white lowland, and (3) red and white lowland breed. Besides these breeds, there are the white backs and other breeds of local cattle in the eastern section of the country.

Hogs

Hogs are used mainly for meat and lard. Production, however, is varied, depending on the type of feed and the individual breeds. Hogs also supply the market with processed products, such as, ham, pork loin, sausage, bacon, lard, fat back, and leaf fat. Because of the variety of products, different regions must be established within the country.

The region of heavily fattened hogs, not only a source of meat but also lard and fat back, is comprised of the eastern part of the Olsztyn and Warsaw wojewodztows, Bialystok Wojewodztwo, the northern and central parts of Lublin Wojewodztwo, and the northeastern part of Kielce Wojewodztwo.

The region of meat-fat hogs supplies meat lightly overlaid with fat, for use in an unprocessed state. This region supplies the pork for butcher shops. They have a live weight of 110 to 130 kilograms. This is the largest pork-producing region.

This region includes Szczecin Wojewodztwo (excluding Czluchow and Zlotow powiats); the northern and eastern sections of Gdansk Wojewodztwo, the western sections of Olsztyn, Warsaw, Kielce, and Krakow wojewodztwos, all of Lodz, Katowice, Opole, Wroclaw, Zielona Gora wojewodztwos; Konin, Kolo, Turek, and Kalisz powiats of Poznan Wojewodztwo; Krasnik, Bilgoraj, Hrubieszow, and Tomaszow powiats of Lublin Wojewodztwo; and Nisko, Kolbuszowa, Rzeszow, and all the southern powiats of Rzeszow Wojewodztwo.

The bacon region supplies hogs of an average weight of 90 kilograms. The meat from such young hogs is delicate, tender, and overlaid with a uniformly thin layer of fat.

The bacon region is comprised of Kartuzy, Kwidzyn, Tczew, and Gdansk powiats of Gdansk Wojewodztwo; Zlotow, Czluchow, and Bytow powiats of Szczeci Wojewodztwo; Chojnice, Sepolno, Wyrzysk, Szupin, Swiecie, Tuchola, Chelmno, Grudziadz, Wabrzezno, Lubawa, Brodnica, Wloclawek, Mieszava, Inowroclaw, Torun, Bydgoszcz, and Rypin powiats of Pomorze Wojewodztwo; Choldziez, Oborniki, Szamotuly, Nowy Tomysl, Wolsztyn, Koscian, Gostyn, Krotoszyn, Wrzesnia, Gniezno, Znin, Wagrowiec, Leszno, Wogilno, Jarocin, Rawicz, Ostrow,

Kepno, Pila, Czarnkow, Sroda, Srem, and Miedzychod powiats of Poznan Wojewodztwo; Plock, Gostynin, and Dzialdowo powiats of Warsaw Wojewodztwo; Lublin, Zamosc, and Kransystaw powiats of Lublin Wojewodztwo; Jaroslaw, Przeworsk, Debica, Mielec, Lancut, Lubaczow, Przemysl, Tarnobrzeg, and Rzeszow powiats of Rzeszow Wojewodztwo; Milcz Powiat of Wroclaw Wojewodztwo; and Dabrowa Tarnowska, Brzesko, Tarnow, and Bochnia Powiats of Krakow Wojewodztwo.

Sheep

The problem of developing sheep breeding must be considered, like any other branch of agricultural production, from the standpoint of natural and economic conditions, and farm organization.

Despite widespread opinion to the contrary, natural conditions in Poland are not an obstacle to the development of sheep breeding. The innate ability of sheep to adjust to environment is helpful, and has led to the development of a number of breeds suited to varied conditions. This permits the selection of types and breeds suitable to Poland's physical conditions.

In planning the expansion of sheep breeding, the first considerations are wool and skins. Meat and milk or, strictly speaking, the products derived from them, are auxiliary products and should increase the profitability of sheep raising.

After these factors have been considered, the proper breeding program can be determined. The chief purpose of sheep production is wool and meat. The following regions are suggested for improved sheep raising:

1. The wool and meat region, covering the largest area -- Poznan, Zielona Gora, Bydgoszcz, Lodz, and Kielce wojewodztwos; the western part of Lublin Wojewodztwo; and the southern powiats of Szczecin, Koszalin Wroclaw, Opole, Krakow, and Rzeszow wojewodztwos.

2. The sheepskin region -- Bialystok Wojewodztwo.

3. The fur region -- the eastern part of Lublin Wojewodztwo.

4. The milk and sheepskin region -- the mountain powiats of Wroclaw, Opole, Katowice, Krakow, and Rzeszow Wojewodztwos.

5. Zulawy and the central section of the Notec River Basin are recommended for raising milk sheep.

This is the first attempt at solving the immensely difficult problem of regionalizing agricultural production. Because of the tremendous task which the Six-Year Plan sets before us, regionalization of agricultural production becomes an immediate and pressing problem. It is better to attempt to determine production regions of the more important branches of the agricultural economy, even if the regions are not exactly fixed, than to postpone this problem until some future date -- Dr Jan Pajak.

BREEDS OF CATTLE, HOGS, AND SHEEP BEST SUITED FOR PARTICULAR REGIONS OF POLAND -- Lublin, Medycyna Weterynaryjna, Vol IV, No 10, Oct 48

The following lists the breeds of cattle, hogs and sheep considered best suited for particular regions in Poland:

Regions for Cattle Breeding

Warsaw Wojewodztwo -- The red Polish breed is best suited for the powiats of Sierpc, Mlawa, Dzialdowo, Ostrow Mazowiecka, Makow, Przasnysz, Ostroleka, and the eastern part of Pultusk. The black and white lowland breed is best suited for the remaining powiats.

Bialystok Wojewodztwo — Red Polish breed.

Gdansk Wojewodztwo -- Black and white lowland breed.

Kielce Wojewodztwo -- The black and white lowland breed is best suited for Radom, Kozienice, Czestochowa, and Pinczow powiats; the southern parts of Wloszczowa and Jedrzejow powiats; the northeast part of Sandomierz powiat, and the center of Opatow Powiat. The other powiats of this wojewodztwo are best suited to raising the red Polish breed.

Krakow Wojewodztwo -- The powiats of Olkusz, Miechow, and Dabrowa; and the northern parts of Krakow, Bochnia, Brzesko, and Tarnow powiats are best suited for raising black and white lowland cattle. Other powiats in this wojewodztwo are best suited for the red Polish breed.

Lublin Wojewodztwo -- The black and white lowland breed is the best breed of cattle to raise in the powiats of Lukow, Lubartow, Pulawy, and Lublin; and in the western and central sections of Siedlce Powiat. The other powiats are best suited for the red Polish breed.

Lodz Wojewodztwo -- The powiats of Rawa, Opoczno, and Konskie are best suited for the red Polish breed; the remaining powiats are best suited for the black and white lowland breed of cattle.

Olsztyn Wojewodztwo -- The red Polish breed is the best breed of cattle for the powiats of Wegorzewo, Gizucko, Mragowo, Pisz, Szczytno, and Nidzica. The remaining powiats of the wojewodztwo are best suited for the black and white lowland breed.

Pomorze Wojewodztwo -- Black and white lowland breed.

Poznan Wojewodztwo -- Black and white lowland breed.

Rzeszow Wojewodztwo -- The powiats of Debica, Mielec, Przeworsk, and Jaroslaw; the central part of Rzeszow Powiat; the southern parts of Lancut and Tarnobrzeg powiats; and the northern part of Przemysl Powiat are best suited for the black and white lowland breed of cattle. The remaining parts of the wojewodztwo are best suited for the red Polish breed.

Szczecin Wojewodztwo -- Black and white lowland breed.

Slask-Dabrowa Wojewodztwo -- The red Polish breed is the best for the powiats of Opole, Strzelce, Dobrodzien, and Lubliniec; and the northern part of Gliwice and Tarnowskie Gory powiats. The powiats of Niemodlin, Grodkow, Nisa, Prudnik, and Glupczycze are best suited for the red and white lowland breed. The black and white lowland breed is best suited for the remaining parts of the wojewodztwo.

Wroclaw Wojewodztwo -- The red and white lowland breed is the best breed of cattle for the powiats of Bystrzyca Klodzka, Klodzko, Zabkowice Slaskie, Strzelin, Dzierzoniow, Walbrzych, Swidnica, Kamienna Gora, Jawor, Jelenia Gora, Lwowek Slaski, Luban, and the southern parts of Zgorzelec and Zlotoria powiats. The black and white lowland breed is the best breed of cattle for the remaining powiats of the wojewodztwo.

Regions for Hog Breeding

Warsaw Wojewodztwo -- The Pulawy (Golab) breed is recommended for the powiats of Sokolow, Wegrow, Radzymin, Minsk, and Garwolin. The remaining powiats of this wojewodztwo are best suited for the following breeds of hogs: the large white English breed, the white erect-eared breed, and the improved domestic white droop-eared breed.

Bialystok Wojewodztwo -- The Pulawy breed is recommended for Bielsk, Bialystok, and Sokolka powiats. The remaining parts of the wojewodztwo are best suited for the large white English breed, the white erect-eared breed, and the improved domestic white droop-eared breed.

Kielce Wojewodztwo -- The Pulawy breed is recommended for Kozienice, Ilza, Kielce, Jedrzejow, and Wloszczowa powiats; and the northern part of Pinczow Powiat. The remaining parts of the wojewodztwo are best suited for the large white English breed, the white erect-eared breed, and the improved domestic white droop-eared breed.

Lublin Wojewodztwo -- The large white English, the white erect-eared, and the improved domestic white droop-eared breeds are best suited for the powiats of Krasnik, Bilgoraj, Krasnystaw, Zamosc, Hrubieszow, and Tomaszow Lubelski. The Pulawy breed is best suited for the remaining parts of the wojewodztwo.

Lodz Wojewodztwo -- The Pulawy is the best breed for Opoczno and Konskie powiats, and the eastern part of Rawa Mazowiecka powiat. The remainder of the wojewodztwo is best suited for the large white English, white erect-eared, and the improved domestic white droop-eared breeds.

Gdansk, Krakow, Olsztyn, Poznan, Rzeszow, Szczecin, Slask-Dabrowa, and Wroclaw wojewodztwos are the most suitable for the large white English, white erect-eared, and the improved domestic white droop-eared breeds.

Pomorze Wojewodztwo -- The large white English breed, white erect-eared breed, improved domestic white droop-eared breed, and the large white Pomorze breed are suited to this wojewodztwo.

Regions for Sheep Breeding

Warsaw Wojewodztwo -- The long-wool Polish Continental breed is best suited for this wojewodztwo with the exception of Dzialdowo Powiat, where the long-wool Polish Pomorze breed is better.

Bialystok Wojewodztwo -- The Continental breed is best suited for Lomza, Wysokie Mazowieckie, and Bielsk powiats. The rest of the wojewodztwo is best suited for the Wrzosowka breed.

Gdansk Wojewodztwo -- The Pomorze breed is most suitable.

Kielce, Lodz, Poznan, and Wroclaw Wojewodztwos -- The Continental breed is most suitable.

Krakow Wojewodztwo -- The Continental breed is best suited for Olkusz, Miechow, Chrzanow, Krakow, Bochnia, Dabrowa, and Brzeszko powiats; and the northern part of Tarnow Powiat. The southeastern part of Nowy Sacz Powiat is best suited for the black Carpathian Cakel breed. The white Tatry Cakel is best suited for the remaining areas of the wojewodztwo.

Lublin Wojewodztwo -- The powiats of Krasnik and Bilgoraj are best suited for the Krulewka breed. The remaining areas are best suited for the Continental breed.

Olsztyn Wojewodztwo -- The Wrzosowka breed is best adapted for the powiats of Wegorzewo, Gizycko, and Pisz. The Pomorze breed is best suited for the remainder of the wojewodztwo.

Pomorze Wojewodztwo -- The Continental breed of sheep is best suited for the powiats of Szubin, Inowroclaw, Torun, Nieszawa, Rypin, Lipno, Wloclawek, and southern Bydgoszcz. The remainder of the wojewodztwo is best suited for the Pomorze breed.

Rzeszow Wojewodztwo -- The black Carpathian Cakel is best suited for Gorlice, Jaslo, Krosno, Sanok, and Lesko powiats. The rest of the wojewodztwo is best suited for the Continental breed.

Szczecin Wojewodztwo -- The Pomorze breed is best suited.

Slask-Dabrowa Wojewodztwo -- The white Tatry Cakel is best suited for Cieszyn and Bielsko powiats. The remaining powiats are best suited for the Continental breed.

The region for raising the fine-wool sheep (Merino Precoce) is the same as that for the long-wool breeds. However, this type should be raised on large ranges and in large flocks, while the long-wool breeds will be raised on small farms. Karakul and Blackhead sheep may be raised in enclosures throughout the country. -- Eng Jan Pajak, Department Director, Ministry of Agriculture and Land Reform

ZONES FOR CATTLE PRODUCTION -- Lublin, Medycyna Weterynaryjna, Vol IV, No 11, Nov 48

The Ministry of Agriculture and Land Reform has prepared a plan for zoning the production of different breeds of cattle. The plan aims at rationalization of animal husbandry, and distribution of different species of cattle to conform with conditions of terrain and climate in Poland.

Zones are proposed for three basic breeds best suited to conditions in Poland -- the red Polish breed, the black and white lowland breed, and the red and white lowland breed.

The red Polish breed will be raised in the following regions: Bialystok Wojewodztwo; parts of Warsaw, Lodz, and Olsztyn wojewodztwos; and in most parts of Lublin and Kielce wojewodztwos.

The black and white lowland cattle will be raised in the following regions: Gdansk, Poznan, and Pomorze wojewodztwos; and parts of Kielce, Krakow, and Lublin wojewodztwos. This breed of cattle will also be raised in Szczecin and Olsztyn wojewodztwos.

Cattle of the red and white lowland breed will be raised in parts of Wroclaw and Slask-Dabrowa wojewodztwos.

[Appended maps follow.]

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Map 1. Regions of Wheat Cultivation

Map 2. Regions of Barley Cultivation

Map 3. Regions of Sugar Beet Cultivation

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Map 4. Regions of Rapeseed Cultivation

Map 5. Regions of Flax Cultivation

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